

COVER SHEET

RESPONSIBLE AGENCY:

U.S. Department of Energy (DOE)

TITLE:

Final Environmental Impact Statement (FEIS), Construction and Operation of the Spallation Neutron Source (DOE/EIS-0247)

LOCATIONS OF ALTERNATIVE SITES:

Illinois, New Mexico, New York, and Tennessee.

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ABSTRACT:

DOE proposes to construct and operate a state-of-the-art, short-pulsed spallation neutron source comprised of an ion source, a linear accelerator, a proton accumulator ring, and an experiment building containing a liquid mercury target and a suite of neutron scattering instrumentation. The proposed Spallation Neutron Source would be designed to operate at a proton beam power of 1 megawatt. The design would accommodate future upgrades to a peak operating power of 4 megawatts. These upgrades may include construction of a second proton accumulator ring and a second target.

The United States needs a high-flux, short-pulsed neutron source to provide the scientific and industrial research communities with a much more intense source of pulsed neutrons for neutron scattering research than is currently available, and to assure the availability of a state-of-the-art facility in the decades ahead. This next-generation neutron source would create new scientific and engineering opportunities. In addition, it would help replace the neutron science capacity that will be lost by the eventual shutdown of existing sources as they reach the end of their useful operating lives in the first half of the next century.

This document analyzes the potential environmental impacts from the proposed action and the alternatives. The analysis assumes a facility operating at a power of 1 MW and 4 MW over the life of the facility. The two primary alternatives analyzed in this FEIS are: the proposed action (to proceed with building the Spallation Neutron Source) and the No-Action Alternative. The No-Action Alternative describes the expected condition of the environment if no action were taken. Four siting alternatives for the Spallation

Neutron Source are evaluated: Oak Ridge National Laboratory, Oak Ridge, TN, (preferred alternative); Argonne National Laboratory, Argonne, IL; Brookhaven National Laboratory, Upton, NY; and Los Alamos National Laboratory, Los Alamos, NM.

PUBLIC COMMENT AND DOE DECISION:

The Draft EIS (DEIS) was released to the public for review and comment on December 24, 1998. The comment period extended until February 8, 1999, although late comments were accepted to the extent practicable. All of the received comments were considered in preparation of the FEIS¹. DOE will use the analysis in this FEIS and prepare a Record of Decision on construction and operation of the proposed SNS and selection of a site for implementing this proposed action. This decision will be no sooner than 30 days after the Notice of Availability of the FEIS is published in the *Federal Register*.

¹ Text additions made since publication of the DEIS are marked with vertical margin bars and the underlining of text in this FEIS. Vertical bars without underlining indicate the deletion of text or the addition of new tables.